CALIFORNIA STATE BOARD OF HEALTH

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REGULAR MEETINGS.

The meetings of the California State Board of Health are held regularly the first Saturday of each month, but the quarterly meetings required by law to be held at the Capitol of the State are ordinarily designated as January, April, July, and October.

By courtesy of the University of California the Food and Drug Laboratory and the Hygienic Laboratory are located in University buildings at Berkeley, California.

Address all communications to the

SECRETARY, Sacramento, Cal.

NOVEMBER BULLETIN.

A PERMANENT "CLEAN UP" COMMITTEE AND A VIEWPOINT.*

By WILLIAM F. SNOW, Secretary California State Board of Health.

History indicates that in the beginning, man once lived much as the wild meat-eating animals of to-day live. Houses and cooking and clothing and medicines were unknown. With the influence of invention and coöperation among men, have come all the present day complications of modern living. We are accustomed to recognize the great changes which industrial and social conditions have undergone through these influences. We recognize that steam and electricity, commerce and education have brought the people of the world very near to each other. In matters which appeal to the senses we are accustomed to believe that the virtues, vices and customs of one nation or group of people are communicable to other nations or people, and we encourage or fight this communication according as we believe it to be good or bad.

In the case of importation of a dangerous insect or of a serious animal disease we are accustomed to prompt action by our national and state governments. For years there was a most rigid quarantine inspection line for Texas Cattle Fever extending across California, at one time as far north as Stockton (Mount Diablo base line). The quarantine of this animal fever, which has cost the United States millions of dollars, is understood by the public to be due to the activity of a "germ" carried by a species of cattle tick. When the Mediterranean fly threatened California fruit interests the Legislature promptly took action. But when the bubonic plague first appeared in California many people said that it is nonsense to believe the warnings of danger voiced by health officers and scientists. This was because organized effort to seriously fight human diseases is new.

It is true in biology, as it is in physics, that there is not one kind of science for animals and plants, and another kind of science for human beings. It is as true of a man, as of an animal, that if he steps on a nail he will cause a wound which will bleed. If that nail happens to complete an electric circuit he will feel the electric shock, even though he can not see or otherwise recognize the presence of the electricity. If the nail happens to be covered with invisible lockjaw "germs," which are thus introduced into the wound, he may experience the results of disease two weeks later and may lose his life. The difference between these physical and pathological results of contact with the nail is that the physical transmission of electricity is immediate and certain to occur, while the transmission of the disease depends upon the germs introduced being able to overcome the body cells in the battle which must go on before the disease conquers. A story written by H. G. Wells, called "The War of Worlds," is based on the supposed residents of Mars never having had any contact with disease germs. Therefore, when they came to this world they quickly succumbed to these agencies of death. This is an interesting speculation, but science has recently shown that it is not true. Chicks raised under absolutely germ free conditions not only thrive but stand the transition to the germ-laden environment of the normal world without apparent harm. Such experiments indicate that the body has great natural resources for adapting itself to an invisible germ-world filled with both friend and foe. They also help to explain why the relations of disease and health are difficult to explain to persons who know nothing of biology.

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*Address read before a public meeting of representative organizations held under the auspices of the Sacramento Chamber of Commerce, Nov. 14, 1912.

Knowledge of disease prevention a recent acquisition.

All these things are largely a matter of popular education. Everybody knows that hog cholera is a communicable disease of hogs, and that by special methods a serum can be made which may be inoculated into hogs to prevent their having the disease. Nearly everybody recognizes now, that similarly, diphtheria in man is caused by a "germ" which may be combatted by a serum called antitoxin. Every one also knows that yellow fever is carried by a species of mosquito, and most people now understand that malaria is carried only by another species of mosquito. But beyond such general knowledge people have not yet learned the details of preventive medicine or how to reason logically on the causes and effects of disease.

This is not to be wondered at when we consider how recently all our modern knowledge of disease causation and prevention has developed. Our civil war was being fought when Pasteur and his contemporaries were trying to prove before the highest scientific tribunal (the French Academy) that there was no such thing as spontaneous generation of life—that once a material was really sterile it remained so until germ life succeeded in entering. This is a principle every housewife uses annually when she puts up her fruit. This initial scientific battle occurred fifty years ago. Fifty years is not a long time. Twenty years is a still shorter time, and twenty years will cover most of the important work of demonstrating what can be done to prolong life and safeguard health by applying the discoveries of biological science. In the control of animal diseases, the active scientific and public education work carried on has taught the people to watch for and adapt themselves to new biological discoveries. As I have mentioned hog cholera is understood to be a communicable germ disease, and the State spends over $5,000 per year on the preparation and free distribution of a preventive serum, yet the scientific puzzle of the relations of this disease to the swine plague bacillus, and the actual cause of the disease are still unsolved. Because the farmers understand the general facts in these things they trust the scientist, and by applying his discoveries, get results.

Citizens must understand in order to coöperate.

I may repeat that there is not one kind of science for hogs and another for humans. Many human diseases continue to resist the efforts of science to discover their causes, proper treatment, and methods of prevention, but every year some gain is made. Cancer is still a baffling disease; certain phases of kidney and heart diseases remain obscure; poliomyelitis still defies the scientists; but long lists of diseases which in past centuries have caused great tragedies and panic have been conquered. Tuberculosis is no longer a scientific puzzle, nor a difficult therapeutic problem, nor even a hopeless educational problem. It has become primarily an economic and housing problem. Typhoid fever has become largely a problem of building proper water supplies and sewer systems; diphtheria has become a problem of school inspection, laboratory diagnosis and early use of antitoxin; and syphilis has become a problem of a single standard of morals, health certificates for marriage and proper education of the rising generation. Some diseases like typhus fever, cholera and plague have been so successfully fought that the average physician never sees a case in a long experience in practice.

Before great progress can be made in conservation of health the public must clearly understand the general factors in the prevention of each preventable disease. Not only this, but the citizens must know what can be done for them by employed experts and other officials, and what they must do for themselves. For example, malaria can be eliminated from a city or given rural district without the citizens doing anything about it, provided they are willing to pay enough to employ men to eradicate the anopheles mosquito. They may delegate the elimination of typhoid fever without direct participation if they provide laws and adequate appropriations. But tuberculosis demands that every citizen must coöperate by training himself in the habits and associations which will prevent his giving or receiving the disease. With rabies, he must be willing to keep the spirit of the law which requires precautions to prevent the possibility of his dog biting any other dog or person. No laws, without most drastic provisions and prohibitive expenditures, can force people against their understanding and will to protect themselves and their communities against a large number of diseases of this character.

People must demand truth from science.

Cleanliness, both personal and municipal, is a matter for voluntary and intelligent coöperation rather than enforcement of law, except in flagrant cases. As a rule it can not be shown in specific instances that disagreeable sights, smells or sounds are directly causes of disease. They are nuisances, and are allies of disease because of the opportunities afforded various animal or vegetable carriers of disease. And just as it pays a prosperous railroad company to spend millions of dollars in keeping the weeds off its roadbed in order to facilitate the early detection of a loosened spike that might be the first factor in a disastrous wreck, so it will pay the people to spend money and personal effort in keeping their houses, yards and city clean and free from all removable rubbish, as a measure in preventing the unrecognized approach of disease carriers. The level headed majority of the people must hold this view and stand unconfusedly between those who believe that all disease originates in filth, and those who believe that disease is only a matter of imagination which can be controlled at will. These people who hold the balance of power must demand the exact truth from science and be prepared to do the best thing suggested in each hour for action, even though the final unraveling of the methods of disease transmission prove many things previously done to have been unnecessary.

The story of yellow fever is a good illustration of this. For a generation and more every appearance of yellow fever was the signal for "shotgun" quarantines of cities and states; railway trains were halted and all ordinary channels of commerce blockaded; even the army and navy medical regulations required all equipment for the care of patients to be burned. The discovery that a single species of mosquito is the sole agent in spreading yellow fever has completely revolutionized its control. This fact does not discredit science in any way nor does it censure those persons who ordered "shotgun" quarantines in the days when the disease had to be faced without knowledge of its nature and methods of attacking human beings. The current story of infantile paralysis is another illustration of the need for immediate action which for the present must be based on imperfect knowledge of the enemy we are fighting. It has seemed best to require rigid quarantine of the families and social units in which the disease appears, but future investigation may at any time give us the key to as simple and certain a control of this disease as has been employed to make yellow fever a matter of history.

Cost of cleanliness proves a good investment.

I have spent some time on the importance of a viewpoint in taking up the organization of a permanent clean-up campaign, because you will fail unless you have faith in the importance and need for persistent effort in maintaining a sound basis for action. Filth in itself can not generate disease any more than milk once it is sterile, can generate the bacilli which cause it to sour; but in the long run, barring unusual exceptions, low death-rates and long life always go with records of clean communities. While cleanliness is only one factor in improving health conditions it must also be borne in mind that the improvement of health is only one advantage to be derived from a clean-up policy. Increased pleasure and comfort of living are important.

Any one who has studied this problem in the great cities of the world can not help being impressed with the fact that the people as a whole, who live in clean cities like Berlin and Havana, are happier than those living in unclean cities, and that the cost of such cleanliness, great as it may be, is a good investment.

Having said so much, it is my purpose to sketch briefly what I believe will be the trend of organization if you grow and become a force in the city.

A symposium of ideas for a "clean-up" campaign.

First, you will undoubtedly advocate certain "enthusiasm" days for cleaning up. Then you may try many of the experiments that momentarily catch the public attention, such as the tin-can collection competition for school children, and the fly capture competition, and what not. But all such measures are valuable only as original, popular educational methods. They take time and money generally, and after the fever of excitement abates there are still cans and flies innumerable. You may try other plans of sustaining public interest, such as the simultaneous display in important store windows of models of approved garbage cans and rubbish fire-cages. You may try the effect of publicity in comparing one section of the city with another. A spitting census would stimulate considerable discussion. I have had such observations made in various cities. Here in Sacramento, for example, the spitting zones are quite sharply delineated. One could almost reduce the data to a formula giving the average number of expectorations per hour that will be deposited in violation of law on each street in the business portion of the city. My own purpose in collecting such data was to find out how many such expectorations were unintentional, and how many women's skirts were soiled and the transfer of tuberculosis to a home rendered possible by this means. A barn and neglected manure-pile census would prove a debating point. A daily comparison of the number of quarts of flies trapped in each block would be found to bear a definite relation to the number of unclean barns. After you have worked at the essential clean-up problems you will undoubtedly be drawn into the active encouragement of special features of cleanliness or attractiveness.

The idea advanced by Dr. Charles C. Browning of Los Angeles, for narrow running water gutters extending ten feet on either side from each street crossing corner in the business district, is excellent, and would provide for the immediate carrying into the sewers of most of the sputum now expectorated on our sidewalks. The psychology of Mrs. Alice L. Parks' contention, that we should post signs "spit here" instead of only signs "do not spit," is sound. Just as business firms employ experts to write signs and window drapers to devise methods of influencing the public demand, so your committee will probably utilize similar talent in obtaining public coöperation.

European cities apply unique indirect methods.

London ropes off certain side streets, and even sections of important thoroughfares, for specified hours of the day, as play places for the crowded tenements. These street areas are specially cleaned and the police act in a way, during the evening hours, as play supervisors. In New York, on hot days, a special detail of street cleaners and police go through the crowded portions of the East Side and turn on the fire plugs for half hour shower-bath frolics. In many European cities there are systematic efforts made to plant flower or vine seeds over all vacant lots, and wherever one or more vacant blocks exist, permits under certain conditions are issued to families who live in flats, to have a small garden or play-plot. Some of the gayest, happiest pictures I recall of many cities in Germany and even as far north as Copenhagen, are of the evening social gatherings of the working men and women in these play-plots. The actuating purpose behind this movement is the preservation of the home and limitation of the poverty and disease due to alcoholism, but it is a powerful factor in the "clean-up" work of Europe.

In Havana a special committee has the power to compel a man to repaint his house if he uses a color scheme hopelessly at variance with ideas of harmony in colors. In such matters much may be done without law by molding public sentiment. Many cities have regulations requiring buildings to be placed a certain number of feet back from the street. But here again general sentiment unaided by law is most influential. Europe is full of streams, intrinsically far less beautiful than the Sacramento, but by inexpensive walks and methods of beautifying the banks, they become most picturesque and varied in attractiveness. We have an Arbor Day but we make comparatively little use of it. The supervision of billboards, which San Francisco adopted yesterday, is an excellent movement. This movement should be extended to handbills and to dishonest advertising of cures for disease.

Supervision of cheap lodging houses not to be overlooked.

There are other fields of activity which I believe you will be led into. The supervision of the cheap lodging houses of this city is one of these. If you will question the patients in the city and county hospital you will find they nearly all spent from weeks to months in the ten-cent lodging houses here before becoming too helpless, financially and physically, to keep up the fight any longer. You could do an invaluable service to such men by looking up the owners of buildings used for such purposes and taking them to see how these places from which they derive revenues are conducted. The supervision of the retail grocery, meat and bakery shops is another field the women of the city could especially cover. The State law on the sanitation of food stores is excellent but is not generally enforced. The man who goes to the expense of screening his goods from flies, who minimizes the handling of goods by clerks, and provides convenient washroom and toilet facilities for employees receives no more patronage or words of commendation than his competitor who does none of these things. The women have it in their power to do more by occasional personal visits to their tradesmen's stores and by tactful praise or criticism, than can ever be accomplished by official inspection and court fines.

But I must not bore you with further remarks. There is only one other important field of activity which I believe you should be drawn into. In early days it mattered little to the residents of Sutter's Fort what the Indians, camped at Folsom or along the Sacramento River, did, or had in the way of diseases, provided only they did not drink too much firewater and go on the warpath. But to-day with all the advantages of modern transportation, the residents of this vigorous city that has overflowed the confines of the old Fort are concerned very materially in what the people do or have in the way of diseases, for a hundred miles around. You should have a subcommittee on rural sanitation, which could work with local and State officials in all the territory directly contributing to Sacramento's milk, meat and vegetable supply.

Present municipal machinery can accomplish results.

And without further illustration I may say in conclusion that I believe you will accomplish most and have greatest influence if you organize a nucleus of strong committees on the various special subjects you may decide to take up, develop a large number of interested volunteer-reserves about each committee for responses to every appeal of their committee, and then work for the enforcement of existing laws and the encouragement of each citizen to do for himself the particular thing he should do to promote the cause. The city has a department of health and a department of police, a department of parks, and of streets, and ample laws, if enforced, to accomplish whatever is desired. These departments will do most of the administrative and constructive detail work, but they need such a permanent organization as you propose, to create favorable public sentiment, and

I may add parenthetically—to keep prodding them. I think I may say your Commissioners and department chiefs will agree with this view. In anticipation of your really organizing for permanent effort I believe I may state that Commissioner Bliss is considering the plan in operation in a few cities, for utilizing the police force as sanitary inspectors for reporting nuisances and other violations of the health ordinances, and as agents of the health officer in serving notices of abatement and reporting that the notices have been complied with. This is entirely practicable and works well where there is a genuine public sentiment toward the maintenance of a high standard of municipal cleanliness. This is but one of many similar plans that are available for carrying into effect measures decided upon. It only becomes necessary for your organization to arouse interest and "keep tab" on the results achieved. The intermittent enthusiasm of impractical and misguided reformers on the one hand, and indifferent or incompetent public officials on the other, constitute your sources of danger. Both these forces are invaluable assets. It should be your aim to curb the former and stimulate the latter to united effort on each phase of the problem which you select for solution.

REPORT OF THE BUREAU OF ADMINISTRATION FOR OCTOBER, 1912.

JOHN F. LEINEN, Director.

Executive Division.

During the month there were a large number of local nuisances arising in all sections of the State which were referred to this division by municipalities and individuals for investigation. These nuisances arose in some cases from improper methods of garbage disposal or resulted from improper and insufficient management of hog ranches and in other cases they arose from causes such as overflowing cesspools, improper location and maintenance of privy vaults, poor housing conditions, insanitary industrial camps, pollution of streams, expectorating in public buildings, etc.

In most cases these complaints were referred to the local health officer for investigation and report. This division is required to follow up such matters until action looking toward permanent abatement is secured, thus entailing a large amount of correspondence, but only a small proportion compared with the letters received and sent in connection with the many other subjects handled daily.

Considerable correspondence was made necessary and a large quantity of instructive literature distributed on account of the extensive investigation which the Board proposes to make in solving the problem of the disease of poliomyelitis in California.

Summary of office work for October, 1912.

Items.	Total.	No. of Subjects.	Administrative.	Morbidity.	Inter-Bureau.	Miscellaneous.
Letters received	2,208	180	590	720	516	382
Letters sent	2,355	180	620	820	554	361
Circular letters sent	300	2			300	
Report blanks sent	1,910	9	260	1,500	150	
Reports received	1,406	15	260	926	220	
Press clippings, bulletins, and newspapers received	1,545	32	170	930	250	195
Accounts audited	148		20		128	
Estimates approved items	151		19		132	
Checks issued	100		30		70	
General orders issued	56		56			
Circular orders issued	28		28			
Miscellaneous letters advising local health officers and communities	127	20	40	81	6	
Bulletins and other educational literature sent to local health officers and the public	109,675		400		104,675	4,600

Legal Division.

Forty-four persons and firms were summoned to appear before the Board at its regular monthly meeting October 5, 1912, to show cause why they should not be prosecuted for violating the State Pure Food and Drug Laws.

The attorney for the Board rendered the following formal opinions during the month, viz.:

Opinion No. 42, passing upon the legality of a label used on canned salmon.

Opinion No. 43, passing upon the right of a jobber to use the legend "Guaranteed by John Doe Company, under the Food and Drugs Act, June 30, 1906, Serial No. 3810," when in fact said serial number stands in the name of the manufacturer of such goods.

Opinion No. 44, passing upon the legality of a label bearing the words "Tomato—Puree," when the contents of the can were made from whole tomatoes.

Opinion No. 45, passing upon the right of local registrars to charge fees for filing death certificates.

In addition to these formal opinions, the attorney submitted to the Board a number of informal opinions presented in the form of letters, covering numerous subjects relating to pure food and drug matters, powers of State Board of Health, assignment of duties of employees of State Board of Health, etc.

Division of Morbidity Returns.

In so far as funds permit every serious outbreak of communicable disease is carefully followed and where necessary thoroughly investigated. The Division has kept in close touch with the movement of communicable diseases by the weekly reports from local health officers of certain of these diseases, and of others such as plague, Asiatic cholera, yellow fever or typhoid fever, which are reported immediately on their occurrence, along with specified data regarding the source, care, precautions and the like appropriate for each disease. A record is kept of these by means of which the Division is kept informed of health conditions reflected by these diseases and is ready here and there to apply a remedy. By these records, correspondence, newspaper clippings and information from other reliable sources, the Division has constantly at hand a memorandum of each community as to its transient or persistent affection with these preventable causes of sickness, and has a gauge by which to measure and give advice to the local health officer, in case he needs it, and to take State action in the community affected, if found necessary.

Morbidity Report for October, 1912.

Disease.	Cases.	Places.
Poliomyelitis	45	23
Smallpox	12	10
Diphtheria	126	25
Typhoid	199	23
Scarlet fever	142	27
Pneumonia	19	5
Tuberculosis	148	11
Chickenpox	67	12
Gonnorrhea	67	4
Syphilis	6	3
Mumps	132	10
Malaria	31	3
Measles	19	11
Erysipelas	12	3
Epidemic cerebro-spinal meningitis	3	3
Scabies	4	1
Erysipelas	14	4
Tonsilitis	6	2
Rotheln	1	1
Urticaria	1	1
Hookworm	12	1
Amoebiasis	1	1
Totals	1,036	184

Special Report on Morbidity from Poliomyelitis.

Cases Reported from October 1st to October 31st, 1912.

Alameda County	3
Albany 1, Oakland 2.	
Fresno County	4
Fresno City 2, Rural 2.	
Imperial County	2
Brawley 2.	
Los Angeles County	10
Los Angeles City 3, Monrovia 2, Pasadena 2, Pomona 1, Rural 1.	
Napa County	1
Napa City 1.	
Orange County	1
Orange City 1.	
Riverside County	2
Banning 1, Riverside 1.	
Sacramento County	8
Bridgehouse 1, Sacramento City 7.	
San Bernardino County	1
Colton 1.	
San Diego County	4
San Diego City 4.	
San Francisco	5
Santa Clara County	2
Santa Clara 1, Rural 1.	
Sonoma County	1
Cloverdale 1.	
Tehama County	1
Los Molinos 1.	
Total	45

REPORT OF BUREAU OF VITAL STATISTICS.*

GEORGE D. LESLIE, Director.

State Totals and Annual Rates.—The following table shows for California as a whole the birth, death, and marriage totals for the current and preceding months in comparison with those for the corresponding months of last year, as well as the annual rates per 1,000 population represented by the totals for the current and preceding months. The rates are based on an estimated midyear population of 2,579,874 for California in 1912, the estimate having been made by the Census Bureau method with slight modifications.

Birth, Death, and Marriage Totals, with Annual Rates per 1,000 Population for Current and Preceding Months for California: September.

Month.	Monthly total.		Annual rate per 1,000 population: 1912.
	1912.	1911.	
September—			
Births	3,413	2,902	16.1
Deaths	2,630	2,532	12.4
Marriages	2,797	2,446	13.2
August—			
Births	3,288	3,129	15.0
Deaths	2,710	2,577	12.4
Marriages	2,619	2,303	12.0

The birth, death and marriage totals for September, as for preceding months, were much greater in 1912 than in 1911. The birth registration has been much greater each month this year than in the corresponding month of last year.

County Totals.—The first table which follows below shows the monthly birth, death, and marriage totals for the principal counties of the State, the list being limited to counties having a population of at least 25,000 according to the Federal Census of 1910. Totals are also shown for San Francisco and the other bay counties (Alameda, Contra Costa, Marin, and San Mateo), as well as for Los Angeles and Orange counties together.

City Totals.—The second of the following tables gives the birth and death totals for the principal freeholders' charter cities, the list including all chartered cities with a census population of at least 15,000 in 1910. Totals are given likewise for San Francisco in comparison with Oakland, Alameda, and Berkeley, the three cities adjoining one another on the east shore of San Francisco Bay, as well as for Los Angeles in comparison with neighboring chartered cities (Long Beach, Pasadena, Pomona, and Santa Monica).

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*NOTE.—The present report is for the month preceding, but one. This order must be followed hereafter because of the publication of the Bulletin during the early part of the month, before the tabulation of records for the preceding month is completed.

Birth, Death and Marriage Totals, for Principal Counties: September.

County.	September, 1912.		
	Births.	Deaths.	Marriages.
California	3,413	2,630	2,797
Counties of more than 25,000 population (1910):			
Alameda	344	273	283
Butte	47	35	38
Contra Costa	54	22	26
Fresno	140	71	81
Humboldt	50	21	40
Kern	54	22	44
Los Angeles	941	565	679
Marin	15	11	137
Orange	30	47	137
Riverside	59	44	40
Sacramento	122	95	103
San Bernardino	80	74	59
San Diego	61	94	112
San Francisco	564	480	514
San Joaquin	58	101	54
San Mateo	48	25	20
Santa Barbara	31	32	19
Santa Clara	123	96	68
Santa Cruz	28	31	26
Solano	22	14	20
Sonoma	63	55	37
Tulare	45	19	20
Selected groups:			
San Francisco and other bay counties	1,025	811	980
Los Angeles and Orange counties	971	612	816

Birth and Death Totals, for Principal Cities: September.

City.	September, 1912.	
	Births.	Deaths.
Freeholders' charter cities	2,133	1,612
Cities of more than 15,000 population (1910):		
Alameda	36	25
Berkeley	45	32
Fresno	64	21
Long Beach	36	17
Los Angeles	663	373
Oakland	228	166
Pasadena	45	27
Riverside	27	20
Sacramento	106	80
San Diego	35	71
San Francisco	564	480
San Jose	49	46
Stockton	30	70
Selected groups:		
San Francisco	564	480
Oakland, Alameda and Berkeley	309	223
Total, Bay cities	873	703
Los Angeles	663	373
Neighboring cities	110	61
Total	773	434

Causes of Death.—The following table shows the classification of deaths in California for the current month, in comparison with the preceding month:

Deaths from Certain Principal Causes, with Proportion per 1,000 Total Deaths, for Current and Preceding Month, for California: September.

Cause of death.	Deaths: September.	Proportion per 1,000.	
		September.	August.
ALL CAUSES	2,630	1,000.0	1,000.0
Typhoid fever	38	14.4	21.8
Malarial fever	15	5.7	2.9
Smallpox	1	0.4	2.2
Measles	1	0.4	2.9
Scarlet fever	1	0.4	0.4
Whooping-cough	16	6.1	10.7
Diphtheria and croup	5	1.9	2.6
Influenza	4	1.5	1.1
Other epidemic diseases	9	3.4	3.7
Tuberculosis of lungs	259	98.5	114.7
Tuberculosis of other organs	50	19.0	27.7
Cancer	171	65.0	69.4
Other general diseases	116	44.1	46.9
Meningitis	23	8.7	7.7
Other diseases of digestive system	150	57.0	55.0
Diseases of circulatory system	454	172.6	163.5
Pneumonia and broncho-pneumonia	168	63.9	45.0
Other diseases of respiratory system	47	17.9	16.6
Diarrhea and enteritis, under 2 years	104	39.5	47.6
Diarrhea and enteritis, 2 years and over	30	11.4	10.3
Other diseases of digestive system	150	57.0	55.0
Bright's disease and nephritis	148	56.3	55.4
Childbirth	27	10.3	10.0
Diseases of early infancy	126	47.9	42.8
Suicide	63	24.0	21.0
Other violence	246	93.5	93.0
All other causes	134	51.0	41.3

In September there were 454 deaths, or 17.3 per cent of all, from diseases of the circulatory system, and 309, or 11.8 per cent, from various forms of tuberculosis. Heart disease thus led tuberculosis very much indeed.

Other notable causes of death were: Violence, 309; diseases of the digestive system, 284; diseases of nervous system, 247; diseases of respiratory system, 215; cancer, 171; Bright's disease and nephritis, 148; and epidemic diseases, 90.

The deaths from epidemic diseases were as follows: Typhoid fever, 38; whooping cough, 16; malarial fever, 15; diphtheria and croup, 5; and all other epidemic diseases, 16.

The deaths from the three leading epidemic diseases reported for the month were distributed by counties as follows:

Typhoid fever.	
Alameda	1
Amador	1
Fresno	3
Humboldt	1
Imperial	2
Kern	1
Kings	1
Los Angeles	4
Marin	1
Modoc	1
Monterey	1
Nevada	1
Riverside	2
Sacramento	2
San Francisco	4
San Joaquin	2
Santa Cruz	1
Solano	1
Sonoma	1
Sutter	1
Tulare	3
Tuolumne	2
Yolo	1
Total	38

Whooping-cough.	
Alameda	3
Butte	1
Fresno	1
Los Angeles	4
Orange	1
Sacramento	1
San Bernardino	1
San Diego	1
San Francisco	2
San Joaquin	1
Total	16

Malarial fever.	
Butte	1
Kern	1
Kings	2
Placer	1
Sacramento	3
San Francisco	1
San Mateo	1
Shasta	1
Solano	1
Sonoma	1
Tehama	1
Yuba	1
Total	15

Geographic Divisions.—The following table presents data for geographic divisions, including the metropolitan area, or San Francisco and the other bay counties (Alameda, Contra Costa, Marin, and San Mateo), in comparison with the rural counties of Northern and Central California:

Deaths from Main Classes of Diseases, for Geographic Divisions: September.

Geographic divisions.	Deaths: September.										
	All causes	Epidemic diseases	Tuberculosis (all forms)	Cancer	Diseases of nervous system	Diseases of circulatory system	Diseases of respiratory system	Diseases of digestive system	Bright's disease and nephritis	Violence	All other causes
THE STATE	2,630	90	309	171	247	454	215	284	148	309	403
Northern California	299	14	31	15	25	59	24	26	13	42	50
Coast counties	138	4	15	9	19	26	15	8	7	15	20
Interior counties	161	10	16	6	6	33	9	18	6	27	30
Central California	1,451	54	151	109	127	251	116	156	83	187	217
San Francisco	480	9	48	43	35	101	40	54	22	48	80
Other bay counties	331	9	31	28	30	59	34	30	20	36	54
Coast counties	190	3	26	10	16	40	14	24	12	21	24
Interior counties	450	33	46	28	46	51	28	48	29	82	59
Southern California	880	22	127	47	95	144	75	102	52	80	136
Los Angeles	565	12	82	34	50	94	50	66	38	50	89
Other counties	315	10	45	13	45	50	25	36	14	30	47
Northern and Central California	1,750	68	182	124	152	310	140	182	96	229	267
Metropolitan area	811	18	79	71	65	160	74	84	42	84	134
Rural counties	939	50	103	53	87	150	66	98	54	145	133

Sex and Age Periods.—The proportion of the sexes among the 2,630 decedents in September was: Male, 1,648, or 62.7 per cent, and female, 982, or 37.3 per cent.

The following table shows the age distribution by numbers and per cents, of deaths classified by sex:

Deaths Classified by Sex and Age Periods, with Per Cents by Age Periods, for California: September.

Age period.	Deaths.			Per cent.		
	Total	Male.	Female.	Total	Male.	Female.
ALL AGES	2,630	1,648	982	100.0	100.0	100.0
Under 1 year	325	199	126	12.3	12.1	12.8
1 to 4 years	110	58	52	4.2	3.5	5.3
5 to 14 years	57	31	26	2.2	1.9	2.6
15 to 24 years	170	101	69	6.5	6.1	7.0
25 to 34 years	249	159	90	9.5	9.6	9.2
35 to 44 years	303	194	109	11.5	11.8	11.1
45 to 54 years	307	211	96	11.7	12.8	9.8
55 to 64 years	327	221	106	12.4	13.4	10.8
65 years and over	782	474	308	29.7	28.8	31.4

This table shows that relatively more females than males died at under 1 year, 1 to 4 years, 5 to 14 years, and 15 to 24 years, or at each age period under 25 years of age, as well as at 65 years and over, the period of old age.

Occupations.—The table below gives, for deaths 15 years and over, the number of men and women for whom some occupation was reported in contrast with those for whom no gainful occupation was shown:

Deaths, Fifteen Years and Over, Classified by Sex and Occupation, with Per Cents by Sex, for California: September.

	Deaths.			Per cent male.	Per cent female.
	Total.	Male.	Female.		
15 YEARS AND OVER	2,138	1,36	778	63.6	36.4
Occupation reported	1,222	1,15	67	94.5	5.5
No gainful occupation	916	20	711	22.4	77.6

Of the 1,222 decedents for whom occupations were reported the males numbered 1,155, or 94.5 per cent, and the females only 67, or 5.5 per cent.

The following table shows the distribution of male decedents 15 years and over, engaged in the main kinds of occupation:

Deaths of Males Fifteen Years and Over Engaged in Gainful Occupations, Classified by Kind of Occupation, with Per Cents, for California: September.

Kind of occupation.	Males 15 years and over.	
	Deaths.	Per cent.
ALL OCCUPATIONS	1,155	100.0
Professional	62	5.4
Clerical and official	87	7.5
Mercantile and trading	94	8.1
Public entertainment	23	2.0
Personal service, police and military	29	2.5
Laboring and servant	233	20.2
Manufacturing and mechanical industry	254	22.0
Agriculture, transportation and other outdoor	366	31.7
All other occupations	7	0.6

Of the 1,155 male decedents for whom occupations were reported 366, or 31.7 per cent, were engaged in agriculture, transportation, and other outdoor pursuits; 254, or 22.0 per cent, in manufacturing and mechanical industry; 233, or 20.2 per cent, in laboring and servant work; and altogether 302, or 26.1 per cent, in professional, clerical and official, mercantile and trading, and all other occupations.

REPORT OF BUREAU OF THE HYGIENIC LABORATORY FOR OCTOBER.

WILBUR A. SAWYER, M. D. Director.

Fraud in the Sale of Disinfectants.

Most absurd substances are constantly being sold to the public as germ-killers. Clever salesmen, misleading advertisements, and false labeling are responsible for the sale of a great variety of substances and devices, from aromatic oils to ozone machines, under claim that their vapors or gases will kill dangerous bacteria in the air which we breathe. The public will continue to waste its money until legislation makes it unsafe for any manufacturer of disinfectants to sell his goods under misrepresentation.

A few general principles, if kept in mind, will save much money to the purchasers of disinfectants:

1. Soap, hot water, mechanical cleansing, and the boiling of infected articles are important factors in keeping homes safe from disease. Disinfectants may be used in addition to these means, but not in their place.
2. No substance known will kill the bacteria in air, in the presence of living human beings, without injury to the latter. Therefore, claims that vapors or gases (ozone, etc.) will do this, are fraudulent.
3. Deodorants, if efficient, remove or conceal bad odors. Their function is purely aesthetic. They are generally used to conceal conditions which demand soap and water or fresh air. Deodorants may or may not have germicidal powers in addition.
4. Oils which will not mix readily with water are not adaptable to the common uses of disinfectants.
5. Purchasers of disinfectants should confine themselves as far as possible to simple unpatented substances and those few proprietary disinfectants whose strengths, in comparison with the strength of carbolic acid (phenol), are plainly stated on the label. The statement should be made numerically in terms of the "Hygienic Laboratory Phenol Coefficient." This coefficient is determined in accordance with rules laid down by the Hygienic Laboratory of the United States Public Health Service.

An example of the way the helpless public is being imposed upon has just come to the notice of the Laboratory. A sample of an oil, for which claims of germicidal power beyond that of any known substance were made, was examined for the State Board of Control. Apparently the manufacturers were not aware that disinfectants were being tested before they were purchased for State institutions. The label gave the information that a constant dripping of this oil into the bowls of closets or urinals would disinfect them and would also diffuse a pleasant odor which would kill contagious germs in the air, such as those of tuberculosis "and all kinds of fever."

Examination of the oil showed that dried typhoid bacilli could be soaked in it for at least sixteen hours and would remain alive. A water extract was made by shaking some of the oil with an equal part of distilled water for one hour. Typhoid germs were put into the resulting water-extract and were still alive at the end of fifty hours, a little over two days. It is apparent that the oil has no value whatsoever as a disinfectant.

The principle that the public is to be protected against fraud where the individual is unable to judge for himself, has been established by the food and drug laws. Similar protection should be given by national and state legislation against fraud in the sale of disinfectants.

Division of Biological Examinations.

Summary of Examinations made in the California State Hygienic Laboratory during the month of October, 1912.

Condition suspected.		Negative.	Inconclusive.	Total.
Main Laboratory at Berkeley:				
Anthrax	1	----------	----------	1
Diphtheria	32	50	----------	82
Gonococcus infection	5	7	----------	12
Hookworm	----------	2	----------	2
Malaria	----------	9	----------	9
Plague	----------	1	----------	1
Rabies	19	4	1	24
Tuberculosis	9	25	----------	34
Typhoid	6	28	----------	34
Water pollution	8	11	2	21
Miscellaneous	2	3	----------	5
				225
Northern Branch at Sacramento:				
Diphtheria	4	16	----------	20
Gonococcus infection	1	----------	----------	1
Malaria	1	3	----------	4
Tuberculosis	1	2	----------	3
Typhoid	10	6	----------	16
				44
San Joaquin Valley Branch at Fresno:				
Diphtheria	5	14	3	22
Tuberculosis	2	4	----------	6
Typhoid	----------	1	----------	1
				29
Southern California Branch at Los Angeles:				
Diphtheria	1	4	----------	5
Typhoid	----------	6	----------	6
				11
Total number of examinations	----------	----------	----------	309

Testing of Disinfectants.

Examinations of Disinfectants during the month of October, 1912.

Determinations of the Hygienic Phenol Coefficient	2

Division of Preventive Therapeutics.

Pasteur Treatment for the Prevention of Rabies by the State Hygienic Laboratory during the month of October. 1912.

	Treatment commenced.	Treatment completed.
Main Laboratory at Berkeley	3	3
Northern Branch at Sacramento	1	1
San Joaquin Valley Branch at Fresno	0	1
Southern Branch at Los Angeles	0	1
Laboratory of Sacramento Board of Health, by deputized bacteriologist	1	0
Laboratory of San Francisco Board of Health, by deputized bacteriologist	9	5
Laboratory of Los Angeles Board of Health, by deputized bacteriologist	0	0
Laboratory of Letterman German Hospital, Presidio, by deputized bacteriologist	1	0
	15	11

Public Health Instruction.

Participation in Instruction in Public Health during October, 1912.

Main Laboratory at Berkeley:

Bacteriological instruction outfits sent out	2
Bacteriological instruction outfits in use	16
Lectures or talks by the Director	0

Division of Epidemiological Investigations.

Epidemiological Investigations during October, 1912.

Main Laboratory at Berkeley:

Special investigations by the Director 3

Examination of ice supply in the Bay cities for sewage pollution.
Investigation of a human case of suspected rabies in Alameda.
Investigation of a fraudulent disinfectant.

Special investigation by the Bacteriologist in charge of the Northern Branch 1

Investigation of rabies in Grass Valley and Nevada City.

REPORT OF BUREAU OF FOODS AND DRUGS FOR OCTOBER, 1912.

M. E. JAFFA, Director.

Among the investigations carried on at the State Food and Drug Laboratory for the month of October, might be mentioned the examination of samples of ice collected in San Francisco and Oakland, from the respective manufacturers.

The details of the investigation are given below:

Special Report on Chemical Examination of Samples of Ice.

The data here reported were gathered at the request of Dr. Martin Regensburger, President of the State Board of Health.

Seven official samples of ice were collected, four from San Francisco and three from Oakland. Each of the official samples submitted to the Laboratory consisted of a large cake. A portion of the inner part was taken for bacteriological examination, as indicated by the report of the Director of the State Hygienic Laboratory.

For the chemical examinations, large pieces were rinsed with distilled water and allowed to melt in a clean container. The melted sample was analyzed chemically according to the standard methods of water analysis of the American Public Health Association.

The appended tabular statements summarize the chemical examinations made in connection with these samples. The results indicate that there is nothing objectionable from a chemical standpoint in any of the samples of ice analyzed. There is no evidence of contamination, and this is emphasized by there being practically no nitrates nor nitrites, and also by the low content of free and albuminoid ammonia. The limit of tolerance for albuminoid ammonia is between .15 and .2 parts per million. The corresponding figure for oxygen consumed is between 1 and 2 parts.

Report of Analyses of Samples of Ice Made at State Food and Drug Laboratory, Berkeley.

Inspection Serial No.	11856	11862	11870	11852	11853	11854	11855
Laboratory Serial No.	7029	7037	7057	7023	7025	7027	7028
Kind of ice	Artificial	Artificial	Artificial	Natural	Artificial	Artificial	Artificial
Dealer	Oakland Ice and Storage Co.	National Ice and Cold Storage Co.	National Ice and Cold Storage Co.	Union Merchants Ice Delivery Co.	Consumer's Ice Co.	National Ice and Cold Storage Co.	Merchants' Ice and Cold Storage Co.
Locality	Oakland	Oakland	Oakland	San Fran.	San Fran.	San Fran.	San Fran.
Analyzed	Oct. 10, 1912	Oct. 11, 1912	Oct. 17, 1912	Oct. 4, 1912	Oct. 5, 1912	Oct. 8, 1912	Oct. 9, 1912
Parts per million—							
Total solids	8.000	8.000	35.800	8.000	5.000	6.000	7.000
On ignition	Faintly brown.	Faintly brown.	Faintly brown.	Faintly brown.	Faintly brown.	Faintly brown.	Faintly brown.
Parts per million—							
Free ammonia	0.144	0.084	0.880	0.041	0.020	0.040	0.170
Albuminoid ammonia	0.070	0.060	0.082	0.050	0.020	0.060	0.056
Oxygen consumed	0.150	0.320	1.070	0.230	0.200	0.360	0.250
Chlorin	Trace	Trace	Trace	Trace	Trace	Trace	Trace
Nitrates	None	None	None	None	None	None	None
Nitrates	0.005	0.0035	0.006	None	None	0.004	0.004

Division of Laboratory Examinations.

A number of samples of ice cream were analyzed with the result that an appreciable percentage of the samples analyzed were found to be below the legal requirement. It would appear that in many cases the ice cream manufacturer does not recognize the necessity of obtaining a guarantee from the party from whom he purchases the cream. There is no reason why such a guarantee should not be furnished to the ice cream dealer.

Several samples of eggs have been tested at the Laboratory during the past month with the result that a number were mislabeled in that the eggs were sold as fresh eggs, while in fact they were not fresh, but storage or old eggs. It is gratifying, however, to be able to report that the grocers and dealers in general throughout the State are observing the rules and regulations of the State Board with reference to the proper labeling of eggs which have been preserved by cold storage or otherwise.

A total of one hundred samples of different food materials were received and examined at the Laboratory. These include samples of preservatives, meats, baking powders, chocolates, ice, eggs, vinegar, wine, and flour.

With reference to meats, it may be said that there seems to be a misunderstanding among some butchers with reference to the use of different materials which may be added to meat or meat food products. The fact that a preparation sold by a butcher supply house contains a guaranty legend—"Guaranteed by John Smith & Co., under the Pure Food Act, Serial No. 99,000," is not sufficient to warrant the butcher using such a preparation without first investigating its nature, etc. For instance, a preparation may contain a mixture of benzoate of soda and salt, and such a mixture may bear on its label a guarantee legend as indicated above. The statements on the label are perfectly true, but if a butcher used such a preparation he would have to state on the label the presence and the amount of benzoate of soda, otherwise he would not be acting in accordance with the provision of the Pure Food Law.

Food Inspection Decisions.

Any person wishing copies of any of the following Notices of Judgments may obtain same by addressing the Director of the State Laboratory, University of California, Berkeley, Cal.

No. 1448—Adulteration and Misbranding of Vanilla Extract.
No. 1449—Adulteration and Misbranding of "All Bean" Vanilla.
No. 1450—Adulteration of Ice Cream.
No. 1451—Adulteration and Misbranding of Vanilla Extract.
No. 1452—Misbranding of Wine.
No. 1453—Adulteration and Misbranding of Extract of Ginger.
No. 1454—Adulteration and Misbranding of Peppermint Extract.
No. 1455—Alleged Adulteration and Misbranding of Coca Cola.
Nos. 1456, 1457, 1458, 1459, 1460, 1467, 1468, 1470, 1472, 1473, 1479, 1491, 1492, 1493, 1494—Misbranding of Cheese.
No. 1461—Adulteration and Misbranding of Molasses.
Nos. 1462, 1463—Adulteration of Tomato Pulp.
Nos. 1464, 1465—Misbranding of "Denton's Healing Balsam."
No. 1466—Misbranding of Sarsaparilla.
No. 1469—Adulteration of Tomato Paste.
No. 1471—Misbranding of Macaroni.
No. 1474—Misbranding of Beef, Iron, and Wine.
No. 1475—Misbranding of Sorghum and Corn Sirup.
No. 1476—Adulteration of Meat Food Products.

CASES ORDERED REFERRED TO DISTRICT ATTORNEYS SEPTEMBER 7, 1912.

Name of article.	Offense.	Manufacturer or jobber.	Accused dealer.	Locality.
Pork Sausage	Adulterated. Contains sulphur dioxide and substitution of foreign fat. Mislabeled. Contains cereal, not declared on label.		Kwong, Lung & Co.	San Francisco
Pork Sausage	Adulterated. Contains sulphur dioxide and substitution of foreign fat.		Royal Meat Market, Frank Pedelie	San Francisco
Lard	Adulterated. Contains sulphur dioxide, and substitution of foreign fat. Mislabeled. Contains foreign fat, not declared on label.		Sam'l Brown Meat Co.	Vallejo
Chopped Meat	Adulterated. Contains sulphur dioxide		Herbert Brothers	Vallejo.
Sausage Meat	Adulterated. Contains sulphur dioxide		Man Sang & Co.	Oakland
Ice Cream	Mislabeled. Below standard in butter fat		Yokohama Restaurant	Los Angeles
Lemon Extract	Adulterated. Substitution of other materials. Mislabeled. Below standard in lemon oil.	S. O. Meyer Co., San Francisco.	Anspacher Brothers	Livermore
Honey	Adulterated. Contains more than 19 per cent commercial glucose.	S. O. Meyer Co., San Francisco.	Hawaiian Syrup & Extract Co.	San Francisco
Lemon Extract	Adulterated. Other material substituted for lemon extract.		M. J. Miller	Oakland
Lemon Flavor	Mislabeled. Contains coal-tar color not declared on label		M. J. Miller	Oakland
Cider Vinegar	Mislabeled. Not standard cider vinegar. Adulterated. Other material substituted for cider vinegar.		E. Dionne	Los Angeles

CASES ORDERED REFERRED TO DISTRICT ATTORNEYS OCTOBER 5, 1912.

Whiskey	Adulterated. Substitution of other material. Mislabeled. Contains water.		A. Shapiro	Los Angeles
Coffee	Adulterated. Substitution of cereal and chicory. Mislabeled. Substitution of cereal and chicory for coffee.		Y. Y. Perez	Los Angeles.
Headache Tablets	Mislabeled. Contains acetanilid, not declared		W. A. Sloane	South Pasadena
Coffee	Adulterated. Substitution of cereal and chicory. Mislabeled. Substitution of cereal and chicory for coffee.		John Joseph	Los Angeles
Chopped Meat	Adulterated. Contains sulphur dioxide		Hanford Market, Sam H. Hird, Proprietor	Hanford
Pork Sausage	Adulterated. Contains sulphur dioxide, cereal and foreign meat food products. Mislabeled. Foreign material not declared on label.		Hanford Market, Sam H. Hird, Proprietor	Hanford
Pork Sausage	Adulterated. Contains sulphur dioxide, and substitution of foreign fat.		Phillip Staffan	Vallejo
Pork Sausage	Adulterated. Contains sulphur dioxide and substitution of foreign fat.		Park Market	Fresno.
Pork Sausage	Adulterated. Contains sulphur dioxide		Palace Market	Fresno.
Chopped Meat	Adulterated. Contains sulphur dioxide		Scally Brothers	Vallejo
Chopped Meat	Adulterated. Contains sulphur dioxide		Phillip Staffan	Vallejo
Chopped Meat	Adulterated. Contains sulphur dioxide		Thurber & Waterbury	Vallejo
Chopped Meat	Adulterated. Contains sulphur dioxide		Palace Market	Fresno.
Chopped Meat	Adulterated. Contains sulphur dioxide		F. Fitzmaurice	Vallejo
Chopped Meat	Adulterated. Contains sulphur dioxide		Knox Market	Napa
Chopped Meat	Adulterated. Contains sulphur dioxide		Bay City Market	Pacific Grove

REPORT OF THE BUREAU OF PUBLICATIONS AND HEALTH INFORMATION FOR NOVEMBER, 1912.

GUY P. JONES, Acting Director.

Division of Publications.

Through the good offices of the various societies engaged in the warfare against tuberculosis in San Francisco, Los Angeles, Oakland, Alameda, San Diego, Stockton, San José, Long Beach and Sacramento, this Bureau distributed in the churches of these cities, on Tuberculosis Sunday, October 27th, over 100,000 pieces of literature bearing upon the tuberculosis problem. In addition, statistics and other data were sent to 200 clergymen of the State for use in preparing sermons delivered before their respective congregations on that day. Press clippings from all over the State reveal the success of the plan for devoting one Sunday of the year to pulpit agitation for the suppression and ultimate eradication of the disease.

In many pulpits Science and Religion met in unison, a physician having been invited to speak upon the technical side of the problem. Most of these physicians directed their efforts toward condemning the fraudulent remedies for consumption now on the market, advocating the importance of fresh air, sunshine, rest and good food in bringing about a cure. A few years ago it would have been unheard-of and almost impossible for a physician to speak from a church platform in condemnation of the "fake" cure,—a testimonial for which may have appeared in the advertisements of the "Weekly Bugle," together with Deacon Smith's picture and autograph signature—all of which tends to show that we are approaching that Utopia where science and religion are one.

A pamphlet containing the latest information about poliomyelitis, designed for the use of health officers and others desiring technical information upon the most recent discoveries and research was published during the month. This will be sent to all physicians who make application for the same. The State Board of Health has begun active work along lines suggested in this pamphlet, making a special study of the part played by the stable-fly in the transmission of the disease.

Division of Health Information.

As anticipated in the Secretary's "Comments" in the September Bulletin, with the opening of the public schools an increase in the number of cases of children's diseases,—mumps, measles, scarlet fever and diphtheria, shows in the October reports. Poliomyelitis is at a standstill, about the same number of cases being reported in October as in September. The usual early fall crop of typhoid appeared. There were 83 cases in Los Angeles, 32 in San Francisco, 25 in Oakland and 17 in Sacramento during the month of October. In none of these cities was a common source of infection found. The cases probably represent the annual round-up of city campers who drank from a polluted stream while on their vacations, and of those who contracted the disease by careless contact, contaminated milk and raw vegetables, or otherwise.

LIST OF COUNTY HEALTH OFFICERS.

County.	Health officer.	Address.
Alameda	Dr. C. L. McKown	Niles
Alpine*	County Recorder Frank Smith	Markleeville
Amador	Dr. E. E. Endicott	Jackson
Butte	Dr. L. Q. Thompson	Gridley
Calaveras	Dr. Irwin B. March	San Andreas
Colusa	Dr. C. A. Poage	Colusa
Contra Costa	Dr. W. S. George	Antioch
Del Norte	Dr. E. M. Fine	Crescent City
El Dorado	Dr. L. M. Leisenring	Placerville
Fresno	Dr. W. T. Burks	Fresno
Glenn	Dr. J. A. Randolph	Willows
Humboldt	Dr. Carl T. Wallace	Eureka
Imperial	Dr. Virgil McCoombs	El Centro
Inyo	Dr. I. J. Woodin	Independence
Kern	Dr. G. M. Bumgarner	Bakersfield
Kings	Dr. Ralph Motherol	Hanford
Lake	Dr. W. E. Upton	Kelseyville
Lassen	Dr. W. E. Dozier	Susanville
Los Angeles	Dr. E. O. Sawyer	Los Angeles
Madera	Dr. Mary R. Butin	Madera
Marin	Dr. J. H. Kuser	Novato
Mariposa	Dr. F. L. Wright	Mariposa
Mendocino	Dr. J. Liftchild	Ukiah
Merced	Dr. C. H. Castle	Merced
Modoc	Dr. John Stile	Alturas
Mono*	Dr. R. A. Cushman	Bridgeport
Monterey	Dr. Garth Parker	Salinas
Napa	Dr. E. G. Smart	Napa
Nevada	Dr. Carl P. Jones	Grass Valley
Orange	Dr. John Wehrly	Santa Ana
Placer	Dr. J. S. Wheeler	Roseville
Plumas	Dr. F. D. Walsh	Quincy
Riverside	Dr. George E. Tucker	Riverside
Sacramento	Dr. Hugh Beattie	Elk Grove
San Benito	Dr. J. M. O'Donnell	Hollister
San Bernardino	Dr. Philip M. Savage	San Bernardino
San Diego	Dr. Nathan Hunt	San Diego
San Francisco	Dr. R. G. Brodrick	San Francisco
San Joaquin	Dr. R. B. Knight	Stockton
San Luis Obispo	Dr. H. M. Cox	San Luis Obispo
San Mateo	Dr. W. G. Beattie	Colma
Santa Barbara	Dr. J. C. Bainbridge	Santa Barbara
Santa Clara	Dr. William Simpson	San Jose
Santa Cruz	Dr. W. R. Congdon	Santa Cruz
Shasta	Dr. F. Stabel	Redding
Sierra	Dr. R. B. Davy	Downieville
Siskiyou	Dr. F. J. McNulty	Yreka
Solano	Dr. S. G. Bransford	Suisun
Sonoma	Dr. P. A. Meneray	Santa Rosa
Stanislaus	Dr. F. R. De Lappe	Modesto
Sutter	Dr. E. V. Jacobs	Meridian
Tehama	Dr. E. E. Thompson	Red Bluff
Trinity	Dr. D. B. Fields	Weaverville
Tulare	Dr. W. A. Preston	Visalia
Tuolumne	Dr. Wm. Lyman Hood	Sonora
Ventura	Dr. A. A. Maulhardt	Oxnard
Yolo	Dr. W. J. Blevins	Woodland
Yuba	Dr. J. H. Barr	Marysville

LIST OF CITY HEALTH OFFICERS.

City.	Health officer.
Alameda	Dr. A. Hieronymus
Albany	Dr. Robt. Hector
Alhambra	Dr. F. E. Corey
Alturas	Dr. John Stile
Alviso	
Anaheim	Dr. J. L. Beebe
Antioch	Dr. W. S. George
Arcadia	
Arcata	Dr. G. W. McKinnon
Arroyo Grande	
Auburn	A. S. Waldo
Azusa	John E. Hill
Bakersfield	H. Faris
Belvedere	Dr. Florence Scott
Benicia	Dr. W. L. McFarland
Berkeley	Dr. J. J. Benton
Biggs	Dr. B. Caldwell
Bishop	Dr. J. W. Shute
Blue Lake	Dr. G. N. Wood
Brawley	Dr. L. L. Lindsey
Burbank	
Burlingame	
Calistoga	Dr. Henry Abrons
Calexico	Dr. Wm. F. Smith
Chico	G. H. Taylor
Chino	Dr. John W. Callnon
Claremont	
Cloverdale	Dr. Cory C. Ledyard
Coalinga	Dr. H. S. Warren
Colfax	
Colton	Dr. L. A. J. La Motte
Colusa	Dr. C. A. Poage
Compton	J. W. Stone
Concord	Dr. F. F. Neff
Coram	Geo. H. Thomas
Corning	Dr. W. F. Maggard
Corona	Dr. W. H. Chapman
Coronado	Dr. Raffaele Lorini
Cottonwood	Dr. A. B. Gilliland
Covina	
Crescent City	
Daly City	
Davis	Dr. W. E. Bates
Delano	Dr. H. Hildreth
Dinuba	H. Hurst
Dorris	Dr. A. A. Atkinson
Dixon	W. C. Rhem
Dunsmuir	Dr. W. B. Mason
Eagle Rock	Dr. C. H. Phinney
Elsinore	Dr. George D. Keeler
Emeryville	Dr. A. T. Drennan
Escondido	Dr. David Crise
Etna Mills	Dr. W. H. Haines
Eureka	Dr. L. A. Wing
Exeter	Dr. A. D. McLean
Fairfield	Dr. S. G. Bransford
Ferndale	Dr. C. A. Phelan
Fort Bragg	Dr. L. C. Gregory
Fort Jones	Thos. Bransom
Fortuna	Dr. Geo. S. Loveren
Fowler	Dr. W. T. Crawford
Fresno	Dr. Geo. H. Aiken
Fullerton	Dr. F. J. Gobar
Gilroy	Dr. John A. Clark
Glendale	Dr. R. E. Chase
Grass Valley	Paul E. Sears
Gridley	Dr. L. L. Thompson
Hanford	Dr. C. L. Scott
Hayward	Dr. G. E. Reynolds
Healdsburg	Dr. J. W. Seawell
Hemet	Dr. A. B. Eadie
Hermosa Beach	G. A. Cleaveland
Hercules	Dr. M. L. Fernandez
Hillsborough	
Hollister	Dr. R. G. Curtis
Hollywood	E. O. Palmer
Huntington Beach	Dr. G. A. Shank
Huntington Park	Dr. W. Thompson
Imperial	Dr. C. E. Standlee
Inglewood	Dr. H. A. Putnam
Jackson	George Hambric
Kennett	Dr. J. P. Sandhold
Kernville	
King City	
Kingsburg	
Lakeport	Jabez Banks
Larkspur	
Lincoln	F. R. Elder
Lindsay	Dr. W. W. Tourtillot
Livermore	Dr. H. G. McGill
Lodi	Dr. F. W. Colman
Long Beach	Dr. W. H. Newman
Lompoc	
Lordsburg	Dr. J. E. Hubble
Los Angeles	Dr. L. M. Powers
Los Banos	Dr. J. L. McClelland
Los Gatos	Dr. C. K. Small
Loyalton	Dr. G. L. Coates
Madera	
Maricopa	Dr. H. N. Taylor
Martinez	Dr. E. E. Brown
Marysville	Wm. Meek
Mayfield	Dr. F. M. Seibert
McCloud	Dr. R. T. Legge
McKittrick	G. M. Chitwood
Merced	Dr. Brett Davis
Mill Valley	Capt. M. Staples
Modesto	Dr. E. V. Falk
Montague	
Mojave	A. Smith
Monrovia	Dr. C. D. Gaylord
Monterey	Edward Allen
Morgan Hill	Dr. D. W. Watt
Mountain View	Dr. A. H. McFarlane
Napa	J. D. Treadway
National City	Dr. T. F. Johnson
Nevada City	Hugh Murchie
Newman	Dr. H. V. Armistead
Newport Beach	
Oakdale	Elmer E. Endicott
Oakland	Dr. E. N. Ewer
Ocean Side	Dr. R. S. Reid
Ocean Park	Dr. W. M. Kendall
Ontario	Dr. C. S. Orr
Orange	Dr. Arthur H. Dorman
Orland	Dr. S. Goldman
Oroville	Dr. W. F. Gates
Oxnard	Dr. Ralph W. Avery
Pacific Grove	Charles E. Tuck
Palo Alto	Hubert O. Jenkins
Pasadena	Dr. Stanley P. Black
Paso Robles	B. B. Pierce
Perris	A. F. Hardy
Petaluma	Dr. J. M. Proctor
Pinole	J. Chattleton
Pittsburg	Dr. F. S. Gregory
Placerville	P. J. Hall
Pleasanton	Dr. S. J. Wells
Pomona	Dr. T. J. Wilson
Porterville	Dr. O. C. Higgins
Piedmont	Geo. T. Burtchael
Point Arena	
Potter Valley	
Randsburg	E. B. McGinnes
Red Bluff	Dr. F. J. Bailey
Redding	B. F. Saylor
Redlands	Dr. Chas. E. Ide
Redondo Beach	Dr. D. R. Hancock
Redwood City	Dr. J. L. Ross
Richmond	Dr. Chas. R. Blake
Rio Vista	Dr. A. J. McKinnon
Riverside	Dr. Thos. R. Griffith
Rocklin	H. D. Flesche
Roseville	Dr. R. H. Ashby
Ross	
Sacramento	Dr. Wm. K. Lindsay
Saint Helena	S. H. Pettit
Salinas	S. A. McCollum
San Anselmo	Dr. Chipman
San Bernardino	Dr. C. V. McConnico

LIST OF CITY HEALTH OFFICERS—Continued.

City.	Health officer.
San Diego	Dr. F. H. Mead
San Francisco	Dr. R. G. Brodrick
Sanger	——— ———
San Jose	Dr. M. F. Hopkins
San Jacinto	Thos. Lloyd
San Juan	W. R. Moore
San Luis Obispo	Dr. P. L. Rookledge
San Rafael	Dr. W. F. Jones
San Mateo	Dr. S. G. Goodspeed
San Leandro	P. C. Du Bois
Santa Ana	Dr. J. I. Clark
Santa Barbara	Dr. D. A. Conrad
Santa Cruz	Dr. H. E. Piper
Santa Clara	Dr. J. F. Beattie
Santa Monica	Dr. W. H. Parker
Santa Paula	Dr. B. E. Murrill
Santa Rosa	Dr. Jackson Temple
Santa Maria	Dr. O. P. Paulding
Sausalito	Dr. A. H. Mays
Sawtelle	Dr. A. B. Hromadka
Selma	Dr. F. H. Williams
Sierra Madre	Dr. R. H. Mackerras
Sebastopol	Dr. J. J. Keating
Sisson	——— ———
South Pasadena	Dr. C. A. Whiting
South San Francisco	W. P. Acheson
Stockton	Dr. R. T. McGurk
Susanville	Dr. E. S. Drucks
Suisun	——— ———
Stanton	——— ———
Sonoma	——— ———
Taft	E. G. Wood
Tehachapi	L. M. Denison
Tracy	Dr. J. G. Murrell
Tehama	——— ———
Tropico	E. F. Tholen
Tulare	Dr. J. B. Rosson
Turlock	Dr. F. B. Reardon
Ukiah	Dr. J. Liftchild
Upland	W. C. Redman
Vacaville	Dr. A. P. Finan
Vallejo	**Dr. E. A. Peterson**
Venice	Dr. W. M. Kendall
Ventura	J. H. Hardey
Visalia	Dr. A. W. Preston
Watsonville	Dr. F. H. Koepke
Watts	Dr. E. J. Richie
Wheatland	Dr. A. W. Foshay
Whittier	Dr. W. H. Stokes
Willits	Dr. W. L. Blodgett
Willows	Thos. Kinkade
Winters	Dr. J. H. Haile
Woodland	Peter Scott
Yreka	W. D. Doggett
Yuba City	——— ———